Betula papyrifera / Diervilla lonicera - (Abies balsamea) Forest (Paper Birch / Fir Forest)

COMMON NAME	Paper Birch / Bush-honeysuckle - (Balsam Fir) Forest
SYNONYM	Paper Birch / Fir Forest
PHYSIOGNOMIC CLASS	Forest (I)
PHYSIOGNOMIC SUBCLASS	Deciduous forest (I.B)
PHYSIOGNOMIC GROUP	Cold-deciduous forest (I.B.2)
PHYSIOGNOMIC SUBGROUP	Natural/Semi-natural (I.B.2.N)
FORMATION	Montane or boreal cold-deciduous forest (I.B.2.N.b)
ALLIANCE	BETULA PAPYRIFERA FOREST ALLIANCE

CLASSIFICATION CONFIDENCE LEVEL 2

USFWS WETLAND SYSTEM TERRESTRIAL

RANGE

Voyageurs National Park

Large stands of this type are known from only one location in Voyageurs National Park - Deer Island. Smaller, isolated patches of this forest, however, can be found scattered throughout the park.

Globally

This community is found in northern Michigan, northern Minnesota, southern Manitoba, and Ontario.

ENVIRONMENTAL DESCRIPTION

Voyageurs National Park

This type usually occurs on flat terrain or gentle slopes with variable aspects. Soils of this community are shallow sandy loams usually 3-10 cm deep over bedrock.

Globally

This community is found on fresh to moist soils (Hansen *et al.* 1971, Sims *et al.* 1989). In Ontario, stands occur on coarse textured, non-calcareous mineral soils, at times very shallow (<15 cm). The soil texture is typically coarse loam or sandy loam (Sims *et al.* 1989).

MOST ABUNDANT SPECIES

Voyageurs National Park

Stratum	Species
Tree canopy	*Betula papyrifera*
Tall shrub	*Corylus cornuta*
Short shrub	*Vaccinium angustifolium*
Forb	*Aster macrophyllus, Aralia nudicaulis*
Fern	*Pteridium aquilinum*

Globally

Stratum	Species
Tree canopy	*Betula papyrifera*
Short shrub	*Diervilla lonicera*
Forb	*Aster macrophyllus, Aralia nudicaulis*

CHARACTERISTIC SPECIES

Voyageurs National Park

Betula papyrifera, Corylus cornuta, Aster macrophyllus, Aralia nudicaulis, Pteridium aquilinum

Globally

Betula papyrifera, Diervilla lonicera, Aster macrophyllus, Aralia nudicaulis

VEGETATION DESCRIPTION

Voyageurs National Park

The canopy is dominated by deciduous trees. *Betula papyrifera* is frequently the only tree species in the canopy. Lesser amounts of *Populus tremuloides* or *Abies balsamea* may be present or absent. The canopy is moderately

open (60-80% cover) and usually composed of trees 10-15 meters tall. *Corylus cornuta* is the dominant shrub and almost always present either in dense colonies (60-80% cover) or in scattered patches (5-25% cover). Other shrubs that may be present at low cover include *Amelanchier* spp., *Acer rubrum, Abies balsamea, Vaccinium angustifolium,* and *Populus tremuloides*. The herbaceous layer is typically 70-90% cover and consists mainly of *Aster macrophyllus, Pteridium aquilinum*, and *Aralia nudicaulis*. The following herbs may also be found at low cover: *Lycopodium dendroideum, Maianthemum canadense, Trientalis borealis,* and *Clintonia borealis*.

Globally
The canopy of this forested community is closed to moderately open. *Betula papyrifera* is the dominant canopy tree and can form nearly pure stands. *Populus tremuloides*, *Abies balsamea*, *Picea glauca*, and, especially in Canada, *Pinus banksiana* can be found in minor amounts, as well. Tree density can be high, but the growth form and size of the canopy dominants allows significant light to pass through. *Abies balsamea* is common to dense in the understory (Hansen *et al.* 1971) and shrubs such as *Corylus cornuta*, *Diervilla lonicera*, *Rosa acicularis*, and *Taxus canadensis*. The herbaceous layer is similar to other dry-mesic to mesic northern communities. Species found in this layer include *Aralia nudicaulis*, *Aster macrophyllus*, *Clintonia borealis*, *Cornus canadensis*, *Maianthemum canadense*, and *Trientalis borealis*.

CONSERVATION RANK G4?.

DATABASE CODE CEGL002463

COMMENTS
Voyageurs National Park
Diagnostic feature of the type is a canopy comprised almost entirely of *Betula papyerifera*. The Paper Birch/Fir Forest is very similar to the Aspen-Birch/Boreal Conifer Forest but its canopy is composed primarily of *Betula papyrifera*. If the canopy cover of *Betula papyrifera* is less than 90%, the stand is considered an Aspen-Birch/Boreal Conifer Forest. Shrub and herbaceous layers of the two communities are very similar.

Globally
This type often originates after fires. In the absence of disturbance the community may succeed to *Picea glauca* - *Abies balsamea* evergreen or mixed evergreen-deciduous community types (MN NHP 1993). Further north in Canada, it may succeed to *Pinus banksiana* and *Picea mariana* upland forests (Sims et al. 1989). Paper birch has tiny, light-winged seeds, easily blown long distances by wind. Its bark is very flammable, and even ground fires may kill a mature stem. Birch can resprout from the root collar at the base of the trunk, but not from roots further away from the tree (Heinselman 1996).

REFERENCES
Hansen, H. L., L. W. Krefting, and V. Kurmis. 1974. The forest of Isle Royale in relation to fire history and wildlife. University of Minnesota, Agricultural Exper. Station, Tech. Bull. 294, Forestry Series 13.

Heinselman, M.L. 1996. The Boundary Waters wilderness ecosystem. University of Minnesota Press, Minneapolis, MN. 334 p.

Minnesota Natural Heritage Program. 1993. Minnesota's native vegetation: A key to natural communities. Ver. 1.5. Minn. Dep. Nat. Resour., Nat. Heritage Prog. St. Paul, Minn. 110 p.

Sims, R. A., W. D. Towill, K. A. Baldwin, and G. M. Wickware. 1989. Field guide to the forest ecosystem classification for northwestern Ontario. Ontario Ministry of Natural Resources.